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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,406	03/28/2005	Satoshi Okada	0717-0525PUSI	8973

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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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AMIN, JWALANT B

ART UNIT	PAPER NUMBER
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2628

NOTIFICATION DATE	DELIVERY MODE
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10/05/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	Application No. 10/505,406	Applicant(s) OKADA	
	Examiner Jwalant Amin	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/6/07 has been entered.

### ***Response to Amendment***

2. The declaration filed on 9/6/07 under 37 CFR 1.131 is sufficient to overcome the Koyama (US 7006096) reference.

3. Applicant's arguments, see pg. 7-9 of applicant's remarks, filed 9/6/07, with respect to the rejection(s) of claim(s) 1-6 and 8 under 35 U.S.C. 102(e) and 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hill et al (US 6243070) and further in view of Desai (US 6282328).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al (US 6243070; hereinafter Hill).

6. Regarding claims 1, 6 and 8, Hill (figs. 5, 7A-C, 10A-B, 11A-B, 12A-B, 13-15) teaches a character display apparatus (fig. 5), a program for causing a character display apparatus to execute a character display process (program modules, fig. 5), and a recording medium storing a program (magnetic disk and optical disk, fig. 5), comprising a display device (display device 600) comprising a plurality of pixels (col. 10 lines 49-51); a control section (operating system) for controlling the display device (col. 11 lines 62-64), wherein each of the plurality of pixels comprises a plurality of sub-pixels arranged in predetermined direction (horizontal) (fig. 7A, col. 11 lines 1-2), and at least one of a plurality of color elements is assigned to each of the plurality of sub-pixels (RGB pixel sub-components, col. 10 lines 61-63, col. 11 lines 1-2); the control section determines at least one sub-pixel, to which a basic portion indicating a skeleton of a character is assigned (figs. 11A-B shows basic portion of a scaled image generated by hinting is positioned along the R/G pixel boundary, col. 15 lines 13-48), among the plurality of sub-pixels in the display device, based on character shape data indicating character shapes (outline image of the character image); a first pixel of the plurality of pixels comprises a plurality of first sub-pixels (fig. 7A, col. 10 lines 61-63); at least one pixel neighboring the first pixel comprises a plurality of second sub-pixels (fig. 7A, col. 10 lines 61-63; a neighboring pixel to the pixel being currently processed); the control

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section determines an arrangement pattern (bitmap image) containing a plurality of elements (bitmap image contains bits indicating colors values, where 1 indicates the sub-component is turned on, and 0 indicates the sub-component is turned off), wherein a value of each of the plurality of elements is determined depending on whether or not the basic portion is assigned to a corresponding sub-pixel of the plurality of the first sub-pixels and the plurality of the second sub-pixels (white is used to indicate pixel sub-components which are turned on, pixel sub-components which are not white are turned off, col. 16 lines 8-26 ); the control section introduces a predetermined change (mapping portions of a scaled image into corresponding pixel units of the bitmap image) into the arrangement pattern, the predetermined change including one of replacement of a position of the basic portions and duplication of the basic portion (col. 15 lines 49-67, col. 16 lines 1-26, col. 17 lines 1-25), and determines a luminance level of the first pixel based on the changed arrangement pattern (different portions of the scaled image are used to independently determine the luminous intensity values for each sub-pixel, col. 15 lines 62-67, col. 16 lines 1-7, col. 17 lines 15-18 and lines 59-67, col. 18 lines 1-4), wherein the luminance level of the first pixel based on the changed arrangement pattern is determined using a stored table (stored filter weights) indicating a correspondence between arrangement patterns of sub-pixels and luminance levels of sub-pixels arranged in a certain direction, which is one of the same as the predetermined direction and different from the predetermined direction (scaling is performed as a function of RGB striping and weighting are used determining luminous intensity values for pixel sub-components, col. 13 lines 53-61, col. 30 lines 34-38).

Although Hill teaches the limitations as stated above, Hill does not explicitly teach to determine the changed arrangement pattern using a stored table. However, the examiner takes an official notice of the fact that it would have been obvious to one of ordinary skill in art the time of present invention to store the weights of Hill into a table using indexes because storing values in table using indexes allows for faster access to the stored data.

7. Regarding claim 3, Hill teaches the plurality of elements include a first element (current bit representing the sub-component of the pixel) and a second element neighboring the first element (bits of the neighboring sub-pixels, fig. 16); a value (turned on is indicated by bit value 1) of the first element indicates that the basic portion is assigned to a sub-pixel (fig. 16 shows pixel sub-components with white are turned on, which means the basic portion is assigned to that sub-pixels) relating to the first element; a value of the second element (turned off is indicated by bit value 0) indicates that the basic portion is not assigned to a sub-pixel relating to the second element (fig. 16 shows the pixel sub-components are not white when the basic portion is not assigned to those sub-components) (fig. 15, 16, col. 16 lines 8-26); and the control section determines the luminance level (luminous intensity value) of the first pixel based on another arrangement pattern (figs. 12A-B) which is modified (scan conversion) from said arrangement pattern (figs. 11A-B) such that a value of the second element is changed to indicate that the basic portion is assigned to the sub-pixel relating to the second element (col. 15 lines 49-67, col. 16 lines 1-26, col. 17 lines 15-18 and lines 59-67, col. 18 lines 1-4).

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8. Regarding claim 4, Hill teaches the control section determines the luminance level of the first pixel based on a combination of a color of the character and a background color of the character and the arrangement pattern (col. 15 lines 62-67, col. 16 lines 1-37; scan conversion method that generates a bitmap image where "on" means the intensity value associated with the pixel sub-component produces the specified foreground color, and "off" means the intensity value associated with the pixel sub-component produces the specified background color; scan conversion method corresponds to control section; bitmap image/bitmap corresponds to arrangement pattern; "on"/"off" corresponds to values associated with the bits of the bitmap image; intensity value corresponds to luminance level; specified foreground color corresponds to color of the character; specified background color corresponds to background color of the character).

9. Regarding claim 5, Hill teaches the control section compares a combination of a color of the character and a background color of the character with a combination of a predetermined character color and a predetermined background color, and determines the luminance level of the first pixel based on a result of the comparison and the arrangement pattern (col. 19 lines 29-37, col. 20 lines 7-9, col. 23 lines 58-67, col. 24 lines 1-13 and lines 31-36; scan conversion method where the luminous intensity of both a foreground and background colored pixel is determined, and portions of the image are compared to the desired foreground and background colors; image/bitmap image corresponds to arrangement pattern; foreground color corresponds to color of the character; background color corresponds to background color of the character; current

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pixel corresponds to first pixel; desired foreground color/foreground color pixel corresponds to predetermined character color; background color pixel corresponds to predetermined background color; luminance value/luminance intensity values corresponds to luminance level).

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hill, and further in view of Desai (US 6,282,328 B1).

11. Regarding claim 2, Hill teaches the plurality of elements include a first element (current bit representing the sub-component of the pixel) and a second element neighboring the first element (bits of the neighboring sub-pixels, fig. 16); a value (turned on is indicated by bit value 1) of the first element indicates that the basic portion is assigned to a sub-pixel (fig. 16 shows pixel sub-components with white are turned on, which means the basic portion is assigned to that sub-pixels) relating to the first element; a value of the second element (turned off is indicated by bit value 0) indicates that the basic portion is not assigned to a sub-pixel relating to the second element (fig. 16 shows the pixel sub-components are not white when the basic portion is not assigned to those sub-components) (fig. 15, 16, col. 16 lines 8-26).

Hill discloses the claimed limitations as stated above, except that Hill does not explicitly teach the control section determines the luminance level of the first pixel is determined based on another arrangement pattern which is modified from said arrangement pattern such that a value of the first element is interchanged with a value of the second element. However, Desai teaches a method of providing morphological



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transformation of an image by rearranging pixels of the image, employed to effect a dilation transformation by identifying the maximum pixel intensity in each column (col. 1 lines 28-38, col. 2 lines 21-25 and lines 34-46; method of providing morphological transformation corresponds to control section; image corresponds to arrangement pattern; rearranged corresponds to modified; intermediate image corresponds another arrangement pattern; pixels from selected "neighborhoods", or regions, of the source image are rearranged corresponds to another arrangement pattern which is modified from said arrangement pattern; pixel intensity value corresponds to luminance level; in order to identify the maximum pixel intensity in each column, the pixel intensity of all the elements in the column needs to be determined, which corresponds to determining the luminance level of the first pixel; replacing each pixel (point) in the image with its brightest neighbor corresponds to a value of the first element is interchanged with a value of the second element). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to replace each pixel in the image with its brightest neighbor as taught by Desai and use it into the apparatus of Hill to determine the pixel intensity value because such system pertains to the morphological transformation of images via dilation, suitable for use with non-uniform offsets (col. 1 lines 15-18), and operates accurately and rapidly, without requiring unduly expensive processing equipment or without undue consumption of resources (col. 2 lines 1-4).

**Conclusion**

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Okada et al. (US 2002/0015046)

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jwalant Amin whose telephone number is 571-272-2455. The examiner can normally be reached on 9:30 a.m. - 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 571-272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

\*\*\* J.A. 9/27/07



MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600